 0030-0950/84/0001-0033 $2.00/0

A SURVEY OF MONOGENEANS ON THE GILLS OF CATOSTOMID FISHES FROM OHIO (1983)[1]

JOHN C. MERGO JR.[2] and ANDREW M. WHITE, Department of Biology, John Carroll University, Cleveland, OH 44118

ABSTRACT. During 1979 and 1980, gills of 147 catostomid fishes, representing 12 host species from 9 localities in Ohio, were examined for monogenetic trematodes. Thirty-one percent were infected by at least one trematode. Three new host records and 10 new Ohio records are reported. The new host records established are *Neodiscocotyle carpioditis* from *Ictiobus bubalus,* and *Dactylogyrus hamatus* and *Pseudomurraytrema etowanum* from *Hypentelium nigricans.* The new Ohio records are *Pseudomurraytrema paradoxum, Dactylogyrus apos,* and *Dactylogyrus ursus* from catostomids collected in the Grand River, Ashtabula-Lake Co. border; *Pseudomurraytrema etowanum, Pseudomurraytrema rogersi* and *Dactylogyrus hamatus* from Silver Creek, Geauga Co.; *Dactylogyrus duquesnei* and *Anonchohaptor anomalum* from Salt Creek, Pickaway Co; *Neodiscocotyle carpioditis* from Lake Erie, Lorain Co.; and *Pseudomurraytrema alabarrum* from Bridge Creek, Geauga Co. Specimens of most of the species collected were deposited in the U.S. National Museum.

OHIO J. SCI. 84 (1): 33-35, 1984

INTRODUCTION

North American studies concerning the monogenetic trematodes of catostomid fishes are relatively sparse. In Canada, 3 prominant surveys have been conducted (Dechtiar 1972, Hanek and Molnar 1974, Threlfall 1974). In these surveys, a total of 1459 fishes were examined, of which only 136 representing 5 species, were catostomids. Surveys of monogenetic trematodes have also been conducted in the United States. The largest of these, spanning several years, was conducted in the southeast. The catostomids examined were the black redhorse, *Moxostoma duquesnei* (Rogers and Mizelle 1966, Rogers 1969); the Alabama hogsucker, *Hypentelium etowanum* (Rogers and Mizelle 1966, Rogers 1968, Chein and Rogers 1971); the black jumprock, *M. cervinum* (Rogers 1968); the northern hogsucker, *H. nigricans* (Wellborn and Rogers 1967); the smallmouth buffalo, *Ictiobus bubalus;* the river carpsucker, *Carpiodes carpio;* and the spotted sucker, *Mineytrema melanops* (Chein and Rogers 1971).

Surveys involving monogenetic trematodes have also been conducted in Ohio (Bangham 1937, 1941, 1972, Kreugar 1954, Pearce 1950). Although some Ohio surveys have involved catostomids, the number and diversity examined have been small. Only 214 specimens of suckers from Ohio waters have been examined. Of these, 95 represent one species, the common white sucker, *Catostomus commersoni.* The remaining individuals represent 8 additional species: spotted suckers; northern hogsuckers; black redhorses; quillbacks, *Carpiodes cyprinus;* greater redhorses, *M. valenciennesi;* Ohio shorthead redhorses, *M. macrolepidotum breviceps;* western lake chubsuckers, *Erimyzon sucetta;* and golden redhorses, *M. erythrurum.*

METHODS AND MATERIALS

Fish were collected by various means depending on the body of water being sampled. These methods included seining, gill netting, electroshocking, trawling, and trapping. Live fish were transported to a lab where their gills were examined. Trematodes were flattened, then fixed with AFA. After fixation the specimens were stained in borax carmine, dehy-

[1]Manuscript received 12 August 1983 and in revised form 22 December 1983 (#83-30).

[2]Present Address: Department of Zoology, The Ohio State University, Columbus, OH 43210.

TABLE 1

A survey of monogenetic trematodes from Ohio catostomids.

Host	Number Examined	Percent Infected	Parasites	USNM Coll. No.	Locality
Minytrema melanops	2	100	*Pseudomurraytrema alabarrum**		Bridge Creek, Geauga Co.
	11	0			Davenport Pd., Pickaway Co.
Carpiodes carpio	11	0			Davenport Pd., Pickaway Co.
C. cyprinus cyprinus	3	67.7	*Neodiscocotyle carpioditis**	76456	Lake Erie, Lorain Co.
C. c. hinei	4	0			Davenport Pd., Pickaway Co.
Ictiobus bubalus	1	100	*Neodiscocotyle carpioditis***	76456	Lake Erie, Lorain Co.
	1	0			Davenport Pd., Pickaway Co.
I. cyprinellus	9	0			Davenport Pd., Pickaway Co.
I. niger	3	0			Davenport Pd., Pickaway Co.
Hypentelium nigricans	37	56.8	*P. paradoxum**	77647	Grand River, Ash.-Lake Co.
			*Dactylogyrus apos**	77642	Grand River, Ash.-Lake Co.
			*P. rogersi**	77646	Grand River, Ash.-Lake Co.
			*D. hamatus***		Grand River, Ash.-Lake Co.
			*P. etowanum***	77645	Grand River, Ash.-Lake Co.
Moxostoma anisurum	7	100	*D. ursus**	77643	Salt Creek, Vinton Co.
M. duquesnei	12	58.3	*D. duquesnei**		Salt Creek, Pickaway Co.
M. erythrurum	11	27.3	*Anonchohaptor anomalum**		Salt Creek, Pickaway Co.
M. macrolepidotum	1	100	*Dactylogyrus* (undescribed)		Salt Creek, Vinton Co.
Catostomus commersoni	34	1	*Octomacrum lanceatum*	77644	Chagrin River, Lake Co.

*New state record
**New state record and new host record

drated through an ethanol series, and mounted in Canada balsam. When transportation of live fish was impossible, gills were placed in vials containing a 1:4000 formalin solution (Putz and Hoffman 1963) and shaken vigorously to dislodge any monogeneans on the filaments. Sufficient formalin was added to make a 7–10% solution (modified from Rogers 1966). Trematodes obtained by this method were stained and mounted as mentioned above. Specimens of many of the species were deposited in the U.S. National Museum (table I).

RESULTS AND DISCUSSION

One hundred forty-seven catostomids representing 12 species were collected during this investigation. Forty-four fish, or 31% were infected by one or more gill flukes. Of 73 fish examined from Davenport Pond, Pickaway Co., and the Chagrin River, Lake Co., only one common white sucker was infected with a single specimen of *Octomacrun lanceatum*. This represents an infection rate of approximately 1.3%. The infection rate of the remaining 74 fishes taken from all other localities was 58.1%.

The present paper reports 3 new host records and 10 Ohio records (table I). *Neodiscocotyle carpioditis* was first described in Canada by Dechtiar (1967) on quillback collected from both the western and eastern ends of Lake Erie. This study reports *N. carpioditis* from quillback and smallmouth buffalo from the central basin of Lake Erie, Lorain Co. This is the first report of *N. carpioditis* infesting the smallmouth buffalo and the first report of its presence in Ohio waters. *Pseudomurraytrema etowanum* Rogers 1966, and *Dactylogyrus hamatus* Rogers and Mizelle 1966, are reported from northern hogsuckers collected from Silver Creek, Geauga Co. This paper is the first report of *P. etowanum* and *D. hamatus* parasitizing northern hogsuckers and the first record of their occurrence in the state of Ohio. Seven additional Ohio records are reported: *D. duquesnei* Mueller 1938, from black redhorses collected from Salt Creek, Pickaway Co.; *D. apos* Mueller 1938, from northern hogsuckers from the Grand River at the Ashtabula-Lake Co. border; *D. ursus* Mizelle and Donohue 1944, from silver redhorses, *Moxostoma anisurum*, from the Grand River at the Ashtabula-Lake Co. border; *Anonchohaptor*

anomalum Mueller 1938, from golden redhorses from Salt Creek, Pickaway Co.; *Pseydomurraytrema alabarrum* Rogers 1966, from northern hogsuckers from Bridge Creek, Geauga Co.; and *P. paradoxum* Kritsky and Hathaway 1969, from northern hogsuckers from the Grand River at the Ashtabula-Lake Co. border.

LITERATURE CITED

Bangham, R. V. 1937 Parasites of Wayne County (Ohio) stream fish. Trans. Amer. Fish. Soc. 68: 263–268.

——— 1941 Parasites from fish of Buckeye Lake, Ohio. Ohio J. Sci. 41: 441–448.

——— 1972 A survey of fish parasites of western Lake Erie. Bull. Ohio Biol. Surv. 4: 1–19.

Chein, S. M., and W. A. Rogers 1971 Four new species of monogenetic trematodes, genus *Pellucidhaptor,* from fishes of the southeastern U.S. J. Parasit. 56: 480–485.

Dechtiar, A. O. 1972 Parasites of fish from Lake of the Woods, Ontario. J. Fish. Res. Bd. Canada. 29: 275–283.

Hanek, G. and K. Molnar 1974 Parasites of freshwater and anadromous fishes from Matamek River system, Quebec. J. Fish. Res. Bd. Canada 31: 1135–1139.

Kreugar, R. F. 1954 A survey of the helminth parasites from Van Buren Lake and Rocky Ford Creek, Ohio. Ohio J. Sci. 54: 277–279.

Pearce, W. J. 1950 A survey of the helminth parasites from Lake Erie and Ohio River drainage areas. Unpubl. M. A. Thesis, Bowling Green State Univ., Bowling Green, OH. 53 p.

Putz, R. E. and G. L. Hoffman 1963 Two new *Gyrodactylus* (Trematoda: Monogenea) from cyprinid fishes with synopsis of those found on North American fishes. J. Parasit. 49: 559–566.

Rogers, W. A. 1966 Three new species of *Pseudomurraytrema* (Trematoda: Monogenea) from the gills of catostomid fishes. J. Parasit. 52: 462–465.

——— 1968 Eight new species of *Gyrodactylus* (Monogenea) from the southeastern U.S. with redescriptions of *G. fairporti* Van Cleave 1921 and *G. cyprini* Diarova 1964. J. Parasit. 54: 490–495.

——— 1969 Two new species of *Pseudomurraytrema* from the gills of Alabama catostomid fishes. J. Parasit. 55: 321–323.

——— and J. D. Mizelle 1966 New species of Dactylogyrinae from Alabama fishes. J. Parasit. 52: 707–712.

Threlfall, W. 1974 New and previously described species of monogenetic trematodes from Labrador catostomids and cyprinids. Folia Parasitologica. 21: 205–214.

Wellborn Jr., T. L. and W. A. Rogers 1967 Five new species of *Gyrodactylus* (Trematoda: Monogenea) from the southeastern U.S. J. Parasit. 53: 10–14.